Listing of Claims:

This Listing of Claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An engineered osteochondral graft for promoting the growth of cartilage in a patient at a defect site in need of repair, comprising a ~~matrix~~ polymer block and a first population of ~~MSCs~~ mesenchymal stem cells, wherein said first population of ~~MSCs~~ mesenchymal stem cells are press-coated on a ~~top~~ surface of said ~~matrix~~ polymer block, and said first population of ~~MSCs~~ mesenchymal stem cells forms a cartilage layer on said ~~top~~ surface of said ~~matrix~~ polymer block.

2. (Currently Amended) The engineered osteochondral graft of **Claim 1**, wherein said ~~matrix~~ polymer is biodegradable.

3. (Currently Amended) The engineered osteochondral graft of **Claim 2**, wherein said ~~matrix~~ polymer is selected from the group consisting of demineralized bone matrix ~~(DBM)~~, biodegradable polymers, calcium-phosphates and hydroxyapatite.

4. (Currently Amended) The engineered osteochondral graft of **Claim 3**, wherein said ~~matrix~~ polymer is a porous polylactic acid.

5. (Original) The engineered osteochondral graft of **Claim 4**, wherein said porous polylactic acid is D,D-L,L-polylactic acid.

6. (Currently Amended) The engineered osteochondral graft of **Claim 5**, wherein said ~~matrix~~ polymer block is a D,D-L,L-polylactic acid polymer block of about 1x0.5x0.5 cm, said ~~top~~ surface of said ~~matrix~~ polymer block is about 0.25 cm^2, said first population of ~~MSCs~~ mesenchymal stem cells is about $1.5x10^6$, and said cartilage layer is about 1-1.5 mm thick.

7. (Currently Amended) The engineered osteochondral graft of **Claim 1**, wherein said ~~matrix~~ polymer block has a shape compatible with said defect site.

8. (Currently Amended) The engineered osteochondral grafted of **Claim 1**, wherein said ~~MSCs~~ mesenchymal stem cells are isolated from a tissue selected from the group consisting of bone marrow, blood, periosteum, muscle, fat, bone and dermis.

9. (Currently Amended) The engineered osteochondral grafted of **Claim 8**, wherein said ~~MSCs~~ mesenchymal stem cells are isolated from bone marrow.

10. (Currently Amended) The engineered osteochondral graft of **Claim 1**, wherein said engineered osteochondral graft further comprises an osteoinductive growth factor in an amount sufficient enough to elicit osseointegration, wherein said osteoinductive growth factor is BMP-2.

11. Cancelled

12. (Currently Amended) The engineered osteochondral graft of **Claim 1**, wherein said engineered osteochondral graft further comprises a second population of ~~MSCs~~ mesenchymal stem cells which are loaded ~~in the remaining volume of said matrix~~ within a porous scaffold of said polymer block, and said second population of ~~MSCs~~ mesenchymal stem cells is in an amount sufficient enough to elicit osseointegration.

13. (Currently Amended) The engineered osteochondral graft of **Claim ~~12~~ 1**, wherein said engineered osteochondral graft further comprises an osteoinductive growth factor in an amount sufficient to elicit osseointegration, wherein said osteoinductive growth factor is BMP-2.

14. (Original) The engineered osteochondral graft of **Claim 13**, wherein said osteoinductive growth factor is BMP-2.

15-16. Cancelled.

17. (Currently Amended) A method of fabricating an osteochondral graft comprising the steps of contacting a ~~top~~ surface of a ~~matrix~~ polymer block with a high-density pellet of a population of ~~MSCs~~ mesenchymal stem cells for a first period of time sufficient enough to form a ~~cell-matrix~~ cell-polymer structure, and culturing said ~~cell-matrix~~ cell-polymer structure in a chondrogenic differentiation medium for a second period of time sufficient enough to form a cartilage layer on said ~~top~~ surface of said ~~matrix~~ polymer block, wherein said population of ~~MSCs~~ mesenchymal stem cells is an amount enough for the formation of said cartilage layer.

18-20. Cancelled.

21. (Currently Amended) The method of **Claim 17**, wherein said first population of ~~MSCs~~ mesenchymal stem cells is about $1.5x10^6$ cells per 0.25 cm^2 of said top surface area.

22. (Currently Amended) The method of **Claim 17**, wherein said ~~matrix~~ polymer block is a D,D-L,L-polylactic acid polymer block of about 1x0.5x0.5 cm, said ~~top~~ surface is about 0.25 cm^2, said population of ~~MSCs~~ mesenchymal stem cells is about 1.5.times.10^6, said first period of time is about 3 hours, said second period of time is about 3 weeks, and said chondrogenic differentiation medium contains about 10 ng/ml TGF-β1.

23-28. Cancelled.